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# Ulnar Gutter

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## Disclaimer

**The views expressed are those of the presenter(s) and do not reflect the official views or policy of the Department of Defense or its Components**



# Overview

- **Indications**
- **Cast Vs Splint**
- **Materials Needed**
- **General Principles**
- **Splint**
- **Cast**
- **Self Evaluation**
- **Points to Discuss with Patient**



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# Indications

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- **Soft-tissue hand injuries to the fourth and fifth fingers**
- **Fourth and fifth metacarpal fractures**
- **Fractures of the fourth and fifth phalanges**
- **Positioning for rheumatoid arthritis or osteoarthritis**



Case courtesy of A.Prof Frank Gaillard, Radiopaedia.org, rID: 7544





# Cast Vs Splint

## Casting

- **Definitive Management**
- **Does not allow for continued swelling**
- **Better control of ROM**

## Splinting

- **Acute Management**
- **Allows for continued swelling**
- **ROM limited by application and compliance**







# Materials Needed

- Stockinette
- Trauma Shears
- ACE Wrap
- Padding (Webril)
- Water Receptacle
- Splinting Material
  - Plaster of Paris, Pre-fabricated plaster or fiberglass (Orthoglass)
- Casting Material
  - Fiberglass







# General Principles

- **Measure out dry material at extremity being treated**
  - **Plaster shrinks slightly when wet; If too long can fold ends back**
  - **Can be measured on contralateral extremity**
- **Apply 2-3 layers of webril, avoid wrinkles, place extra padding on bony prominences and between digits if needed**
- **Use approximately 10-12 layers of splinting material (dependent on size of individual)**
- **Mold with palms of hand vs fingers**
- **After complete check for function, arterial pulse, capillary refill, temperature of skin, and sensation**
- **Plain films or flouroscopy to evaluate injury and splint/cast**







## Splinting Order

- Apply stockinette and/or webril first
- Apply wet/prepared splinting material
- Cover with webril
- Secure with elastic (ACE) band
- Mold splinting material as needed

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## Splinting Order (cont)

- Apply stockinette and/or webril first
- Apply wet/prepared splinting material
- Cover with webril
- Secure with elastic (ACE) band
- Mold splinting material as needed





## Casting Order

- Apply stockinette first, then webril
- Apply wet/prepared initial casting material
- Fold over excessive stockinette
- Apply second layer of wet/prepared casting material
- Mold casting material as needed



### ➤ Step-by-Step Video Guide:

- <http://emedicine.medscape.com/article/80165-technique>



# Self Evaluation

- **Is injured extremity in desired position?**
  - **Empty can position**
  - **Wrist extension 20°**
  - **MCP flexion 70°**
- **Does injured extremity maintain good color, temp, and cap refill**
- **Were thermal injuries avoided by ensuring water was not hot and cast was not too thick**







# Patient Education

- **Elevate injured extremity at home**
  - **Prop on pillow if needed**
- **Continue moving other fingers, elbow, and shoulder periodically throughout the day**
- **If cast feels tight despite elevation seek medical assistance**
- **Do not scratch under cast; do not get cast wet**
- **Get immediate assistance if:**
  - **Numbness (pins and needles) of fingers**
  - **Excessive swelling of fingers**
  - **Blueness or whiteness of fingers**
  - **Severe pain**





# Conclusion

- **Indications**
- **Cast Vs Splint**
- **Materials Needed**
- **Key Points Before any Casting/Splinting**
- **Splint**
- **Cast**
- **Self Evaluation**
- **Points to Discuss with Patient**



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# References

Boyd, A. S., Benjamin, H. J., & Asplund, C. (2009).  
Principles of casting and splinting. *American Family Physician*, 79(1).  
Retrieved from [http://www.aulmanclerkship.com/uploads/7/7/6/2/7762745/casting\\_and\\_splinting.pdf](http://www.aulmanclerkship.com/uploads/7/7/6/2/7762745/casting_and_splinting.pdf)  
  
<http://emedicine.medscape.com/article/80165-periprocedure>



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